

S&P Global Ratings  
Form NRSRO Exhibit 1  
Performance Measurement Statistics

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Table 1		Financial Institutions, Brokers, or Dealers Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	3	100.00%																								
AA+	22		100.00%																							
AA	17		11.76%	70.59%	5.88%																					
AA-	52			3.85%	94.23%	1.92%																		11.76%		
A+	136				2.21%	92.65%		1.47%																		
A	118				0.85%	1.69%	96.61%																			
A-	133						9.02%	82.71%	2.26%	0.75%																
BBB+	156						0.64%	4.49%	84.62%	4.49%	0.64%															
BBB	176								3.41%	85.23%	5.11%			0.57%												
BBB-	102									5.88%	80.39%	1.96%														
BB+	57										12.28%	71.93%	5.26%													
BB	56											16.07%	58.93%	10.71%												
BB-	119											0.84%	8.40%	73.11%	2.52%	1.68%							1.68%			
B+	66										1.52%		1.52%	9.09%	60.61%	7.58%	1.52%						1.52%			
B	57								1.75%						3.51%	50.88%	14.04%	3.51%	3.51%							
B-	46															4.35%	78.26%	4.35%	2.17%	2.17%						
CCC+	20															5.00%		60.00%	10.00%				15.00%			
CCC	1																	100.00%								
CCC-																			100.00%							
CC																										
C																										
Total	1337																									

Table 2	Financial Institutions, Brokers, or Dealers Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	3	100.00%																							
AA+	23		95.65%	4.35%																					
AA	16		12.50%	75.00%	6.25%																			6.25%	
AA-	63				76.19%	19.05%			1.59%															3.17%	
A+	119			0.84%	2.52%	77.31%	10.92%	1.68%																6.72%	
A	138				1.45%	11.59%	68.12%	12.32%																6.52%	
A-	118						12.71%	63.56%	11.02%	1.69%														11.02%	
BBB+	191					1.05%	0.52%	11.52%	53.40%	22.51%	3.14%	0.52%	0.52%											6.81%	
BBB	136								8.82%	66.91%	6.62%	1.47%		0.74%	0.74%									14.71%	
BBB-	104									8.65%	54.81%	8.65%	0.96%											26.92%	
BB+	60										13.33%	38.33%	3.33%	1.67%	1.67%							3.33%		38.33%	
BB	68												14.71%	39.71%	27.94%	1.47%						1.47%		14.71%	
BB-	110										0.91%	1.82%	7.27%	50.00%	9.09%	3.64%		1.82%						25.45%	
B+	58													15.52%	37.93%	5.17%	6.90%		1.72%				1.72%	31.03%	
B	75										1.33%				9.33%	28.00%	18.67%	5.33%	4.00%			4.00%		29.33%	
B-	58															5.17%	31.03%	17.24%	3.45%	1.72%		5.17%		36.21%	
CCC+	1																							100.00%	
CCC	2																								
CCC-																									
CC																									
C																									
Total	1343																								

Table 3	Financial Institutions, Brokers, or Dealers Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																								
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	8	37.50%	50.00%																						
AA+	23		73.91%	21.74%																				12.50%	
AA	13		15.38%	38.46%	7.69%	15.38%																		4.35%	
AA-	70			1.43%	41.43%	24.29%	5.71%		1.43%															23.08%	
A+	98			1.02%	7.14%	27.55%	18.37%	9.18%	4.08%															25.71%	
A	143				0.70%	20.98%	23.78%	17.48%	4.90%	1.40%	1.40%													32.65%	
A-	108				0.93%	8.33%	13.89%	25.00%	13.89%	2.78%			0.93%											29.37%	
BBB+	103						5.83%	10.68%	26.21%	19.42%	4.85%													34.26%	
BBB	135					0.74%	0.74%	2.22%	15.56%	27.41%	4.44%	1.48%	0.74%	5.93%	1.48%								0.74%	33.01%	
BBB-	115						0.87%	0.87%	6.96%	11.30%	12.17%	7.83%	1.74%	6.09%		1.74%								38.52%	
BB+	47							4.26%	4.26%	4.26%	8.51%	2.13%	2.13%	6.38%	2.13%									50.43%	
BB	64							4.69%	3.13%	6.25%	3.13%	6.25%	7.81%	10.94%	6.25%				1.56%				1.56%	65.96%	
BB-	71								1.41%	1.41%		4.23%	5.63%	2.82%	5.63%	4.23%	5.63%						4.23%	48.44%	
B+	52									1.92%	1.92%	5.77%		9.62%	5.77%	3.85%	5.77%	3.85%	1.92%				1.92%	64.79%	
B	53										3.77%	1.89%			1.89%	1.89%	7.55%						4.23%	57.69%	
B-	48														2.08%	8.33%	4.17%	12.50%	4.17%				22.64%	60.38%	
CCC+	3														33.33%								20.83%	47.92%	
CCC	9												11.11%							11.11%				66.67%	
CCC-	1																						44.44%	33.33%	
CC	2																						50.00%	100.00%	
C																								50.00%	
Total	1166																								

Table 4		Insurance Companies Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA																										
AA+	15		100.00%																							
AA	33			100.00%																						
AA-	62			1.61%	88.71%	3.23%																		6.45%		
A+	144		2.78%		0.69%	94.44%	0.69%																	1.39%		
A	151					3.97%	90.73%	1.99%																3.31%		
A-	138						11.59%	81.88%	2.90%															3.62%		
BBB+	60			1.67%		1.67%		1.67%	90.00%	1.67%														3.33%		
BBB	60								8.33%	86.67%														5.00%		
BBB-	26									15.38%	69.23%	3.85%												11.54%		
BB+	18										5.56%	83.33%												11.11%		
BB	15									6.67%			73.33%											20.00%		
BB-	13													76.92%										23.08%		
B+	12														83.33%		8.33%							8.33%		
B	30														13.33%	76.67%								10.00%		
B-	7															14.29%	71.43%							14.29%		
CCC+	1																							100.00%		
CCC																										
CCC-																										
CC																										
C																										
Total	785																									

Table 5	Insurance Companies Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA																									
AA+	15		100.00%																						
AA	35			85.71%																				14.29%	
AA-	76			2.63%	65.79%	11.84%	2.63%																	17.11%	
A+	135		2.96%	0.74%	0.74%	84.44%	3.70%		0.74%															6.67%	
A	156					10.26%	71.79%	4.49%	0.64%															12.82%	
A-	143					18.88%	66.43%	3.50%																11.19%	
BBB+	65			1.54%		1.54%		6.15%	73.85%	9.23%														7.69%	
BBB	57						1.75%	1.75%	10.53%	64.91%	1.75%	1.75%	1.75%											15.79%	
BBB-	25									32.00%	40.00%	12.00%												16.00%	
BB+	16										6.25%	31.25%	37.50%											25.00%	
BB	14									7.14%		50.00%	7.14%	7.14%										28.57%	
BB-	13												7.69%	23.08%	15.38%									53.85%	
B+	14													14.29%	42.86%		7.14%							35.71%	
B	36														8.33%	47.22%						2.78%		41.67%	
B-	12																41.67%							58.33%	
CCC+																									
CCC																									
CCC-																									
CC																									
C																									
Total	812																								

Table 6	Insurance Companies Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																								
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA																									
AA+	20		70.00%	25.00%																				5.00%	
AA	24			62.50%		4.17%	4.17%																	29.17%	
AA-	87			11.49%	37.93%	14.94%	3.45%																	32.18%	
A+	135		1.48%	0.74%	5.93%	45.19%	5.93%	1.48%																39.26%	
A	109			0.92%	2.75%	17.43%	36.70%	8.26%																33.94%	
A-	165					6.06%	30.30%	23.64%	5.45%	1.82%			0.61%											32.12%	
BBB+	83				1.20%	2.41%	7.23%	22.89%	18.07%	3.61%														44.58%	
BBB	63			1.59%		1.59%	3.17%	4.76%	17.46%	22.22%			1.59%									1.59%		46.03%	
BBB-	47					4.26%		10.64%	4.26%	25.53%	4.26%				2.13%									48.94%	
BB+	30				3.33%			3.33%		10.00%	6.67%	6.67%												70.00%	
BB	16									6.25%	6.25%	6.25%		6.25%	6.25%		6.25%							62.50%	
BB-	9																							100.00%	
B+	9										11.11%	11.11%			33.33%	11.11%						11.11%		22.22%	
B	14															7.14%						7.14%		85.71%	
B-	8								25.00%							12.50%								62.50%	
CCC+	3											66.67%												33.33%	
CCC																									
CCC-																									
CC	1																							100.00%	
C																									
Total	823																								



Table 7	Corporate Issuers Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	5	80.00%	20.00%																						
AA+	11		100.00%																						
AA	25		12.00%	84.00%																				4.00%	
AA-	35				94.29%																			5.71%	
A+	90				3.33%	96.67%																			
A	177					1.69%	91.53%	2.82%	0.56%															3.39%	
A-	301						3.32%	90.37%	4.65%	0.33%														1.33%	
BBB+	424							4.25%	90.09%	3.54%	0.47%													1.65%	
BBB	476							0.42%	5.46%	87.82%	2.31%	0.21%				0.21%								3.57%	
BBB-	405							0.25%	0.25%	6.67%	78.52%	3.21%	0.74%											10.37%	
BB+	321								0.62%	0.31%	9.03%	76.01%	2.49%	0.93%	0.31%									10.28%	
BB	302									0.66%	0.66%	14.57%	67.22%	4.97%	1.32%	0.33%	0.99%	0.33%					0.33%	8.61%	
BB-	368											0.27%	10.87%	70.92%	3.80%	1.36%	0.54%	0.54%					0.54%	11.14%	
B+	413											0.24%	1.21%	12.83%	62.47%	5.57%	1.45%	0.73%			0.48%		1.21%	13.80%	
B	788												0.51%	1.02%	6.98%	63.45%	10.41%	2.03%	0.63%				0.76%	14.21%	
B-	689														0.87%	9.14%	65.02%	8.27%	1.74%	0.15%	0.29%		2.03%	12.48%	
CCC+	225															2.22%	20.44%	45.78%	8.89%	2.67%	0.89%		6.22%	12.89%	
CCC	53																	7.55%	13.21%	32.08%	9.43%		30.19%	7.55%	
CCC-	13																		7.69%	7.69%	30.77%		38.46%	15.38%	
CC	5																						100.00%		
C																									
Total	5126																								

Table 8	Corporate Issuers Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	5	80.00%	20.00%																						
AA+	11		81.82%		18.18%																				
AA	29		6.90%	62.07%	10.34%	3.45%																			
AA-	49		4.08%	4.08%	48.98%	28.57%	8.16%																	17.24%	
A+	96				5.21%	68.75%	16.67%	2.08%	1.04%	1.04%														6.12%	
A	181					2.21%	69.61%	13.26%	4.97%	0.55%														9.39%	
A-	346				0.29%		4.62%	66.18%	22.54%	1.73%	0.29%					0.29%								4.05%	
BBB+	392						0.77%	5.36%	69.90%	13.52%	3.32%	0.26%	0.51%											6.38%	
BBB	500				0.20%			1.40%	6.20%	64.60%	12.60%	2.60%	1.00%			0.20%								11.20%	
BBB-	378								1.32%	9.52%	50.26%	12.17%	1.59%	1.59%	0.26%	0.53%	0.26%					0.26%		21.96%	
BB+	285								1.05%	1.40%	10.53%	48.42%	10.88%	3.51%	2.11%	1.40%		0.35%					0.70%	19.65%	
BB	341									0.59%	3.23%	16.42%	33.43%	13.49%	6.16%	2.05%	1.47%	0.29%					0.88%	21.99%	
BB-	379							0.26%		0.26%	0.53%	2.37%	12.93%	35.36%	8.18%	4.75%	1.58%	0.79%					5.28%	27.70%	
B+	412								1.94%	9.95%	12.86%	26.46%	12.86%	5.83%	3.16%	0.49%	5.34%	0.49%		0.24%			5.34%	32.52%	
B	834												0.48%	2.52%	6.00%	26.74%	16.07%	5.64%	1.08%	0.24%	0.12%		4.80%	36.33%	
B-	570									0.35%				0.18%	2.11%	6.84%	31.05%	9.12%	1.58%	0.35%	0.35%		12.11%	35.96%	
CCC+	123														0.81%	4.88%	4.88%	8.94%	7.32%	2.44%			42.28%	28.46%	
CCC	67																4.48%	1.49%					62.69%	31.34%	
CCC-	35																						82.86%	8.57%	
CC	8															2.86%	2.86%	2.86%					100.00%		
C																									
Total	5041																								

Table 9	Corporate Issuers Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																								
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	14	28.57%	42.86%		21.43%																				
AA+	5		40.00%			20.00%			20.00%															7.14%	
AA	22			13.64%	13.64%	18.18%	9.09%																	45.45%	
AA-	54		3.70%	11.11%	27.78%	31.48%	7.41%	1.85%	7.41%															9.26%	
A+	95		1.05%	9.47%	6.32%	30.53%	20.00%	12.63%	3.16%	4.21%	1.05%													11.58%	
A	166				1.20%	6.02%	27.71%	18.07%	16.27%	3.61%	3.01%	0.60%		1.81%										21.69%	
A-	257					0.78%	12.06%	27.63%	22.18%	5.84%	4.28%	1.17%	0.39%	1.17%								0.39%		24.12%	
BBB+	317				0.32%	0.63%	2.21%	17.98%	32.18%	16.09%	6.62%	1.89%			0.32%	0.32%							0.95%	20.50%	
BBB	421				0.24%		0.95%	9.03%	18.76%	26.60%	7.84%	3.56%	2.14%	0.48%	0.48%	0.24%		0.24%					0.95%	28.50%	
BBB-	360				0.28%		1.11%	1.94%	8.61%	20.56%	13.06%	5.28%	3.33%	2.22%	0.83%		0.28%	0.28%				2.22%		39.72%	
BB+	232						0.86%	0.86%	2.59%	6.90%	13.36%	14.22%	3.02%	7.76%	2.16%	1.72%		0.43%				2.59%		43.53%	
BB	273								1.10%	2.20%	6.96%	10.62%	9.16%	8.79%	5.86%	1.83%	2.20%	0.37%				5.49%		45.42%	
BB-	300							0.33%		2.00%	4.33%	7.67%	6.33%	9.67%	6.67%	2.67%	2.00%	0.33%	0.33%			7.67%		50.00%	
B+	455								0.22%	0.66%	1.10%	3.52%	3.74%	3.96%	4.62%	3.74%	2.86%	0.88%				12.75%		61.98%	
B	648								0.15%	0.31%	0.15%	0.62%	1.70%	1.23%	4.01%	4.17%	3.86%	0.77%	0.15%	0.15%		17.13%		65.59%	
B-	285									0.35%	0.35%	1.05%	0.35%	2.11%	2.81%	3.16%	3.16%	1.05%	0.35%			27.02%		58.25%	
CCC+	60											1.67%				3.33%						36.67%		58.33%	
CCC	44												2.27%				2.27%					45.45%		50.00%	
CCC-	17															5.88%		5.88%				47.06%		41.18%	
CC	10													10.00%								80.00%		10.00%	
C																									
Total	4035																								

Table 10	Issuers of Asset-Backed Securities - Residential Mortgage-Backed Securities Issues Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																									
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	3471	85.25%	0.09%	0.14%	0.17%	0.03%	0.09%																	13.63%	0.61%	
AA+	1187	1.77%	75.48%		0.25%	0.34%																		11.12%	11.04%	
AA	994	3.22%	13.58%	61.77%	0.10%	0.10%	0.20%	0.20%	0.20%					0.10%										16.30%	4.23%	
AA-	294		4.08%	9.18%	69.05%		1.02%	0.34%																12.59%	3.74%	
A+	684	0.29%	2.78%	4.82%	2.78%	64.18%	0.44%	0.29%	0.88%	0.58%	0.15%													11.55%	11.26%	
A	881	0.45%	0.91%	9.99%	3.97%	8.29%	61.86%	0.23%	0.79%	0.45%	0.68%					0.23%								10.44%	1.70%	
A-	241		0.41%	1.24%	4.56%	14.52%	5.39%	58.92%	0.41%	0.83%	1.66%	1.24%												8.30%	2.49%	
BBB+	497	0.20%	0.80%	1.01%	2.62%	7.85%	5.63%	1.01%	59.36%		1.01%	1.41%			0.20%										10.66%	8.25%
BBB	824			0.85%	0.24%	2.79%	9.47%	18.45%	4.00%	50.61%		0.97%	0.73%	0.12%	0.12%	0.24%									8.86%	2.55%
BBB-	473				0.21%	0.85%	1.27%	6.34%	3.59%	2.75%	68.71%	1.06%	1.27%	1.90%	0.85%	0.42%									6.77%	4.02%
BB+	587					0.17%	1.02%	3.07%	5.28%	13.97%	3.75%	52.98%	0.85%	0.68%	2.21%	1.36%	0.51%		0.17%						10.39%	3.58%
BB	595						0.17%	1.18%	2.86%	9.24%	6.72%	6.05%	64.54%		0.50%	0.84%	0.17%		0.17%						4.71%	2.86%
BB-	249								0.80%	6.83%	10.44%	4.42%	2.01%	59.84%	2.41%	2.41%	2.41%		0.80%				0.40%	4.82%	2.41%	
B+	318								0.31%	2.20%	1.57%	7.23%	10.06%	1.89%	55.35%	1.57%	1.89%		1.26%						8.81%	7.86%
B	670					0.45%		0.45%		0.45%	0.90%	3.73%	10.00%	3.28%	2.24%	66.12%	1.64%		2.69%				0.15%	3.43%	4.93%	
B-	607					0.16%		0.16%		0.16%		1.65%	3.95%	1.15%	3.95%	2.47%	69.03%		2.47%				0.66%	3.46%	10.87%	
CCC+	13															7.69%		84.62%	7.69%							
CCC	3004										0.03%		0.23%	0.13%	1.10%	3.03%	1.07%		79.96%				3.03%	5.89%	5.53%	
CCC-	15								6.67%											86.67%				6.67%		
CC	1541												0.06%				0.06%		1.17%		94.29%		2.66%	0.39%	1.36%	
C																										
Total	17145																									

Table 11	Issuers of Asset-Backed Securities - Residential Mortgage-Backed Securities Issues Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	3337	52.26%	0.27%	0.51%	0.21%	0.12%	0.09%	0.03%										0.06%					0.03%	43.96%	2.46%
AA+	1551	1.16%	50.81%	0.13%	0.90%	0.84%	1.03%	0.13%	1.03%	0.19%	0.84%	0.19%		0.06%	0.06%	0.06%	0.06%						0.06%	22.89%	19.54%
AA	1046	4.97%	8.32%	35.37%	0.19%	0.38%	1.24%	1.63%	0.76%	0.48%			0.29%			0.10%						0.19%	38.05%	8.03%	
AA-	329	1.52%	5.17%	5.47%	46.20%	1.22%	2.43%	0.30%	0.30%	1.82%	0.91%	0.30%											25.23%	9.12%	
A+	984	0.51%	2.03%	3.35%	0.51%	34.96%	0.51%	1.02%	3.66%	2.34%	1.73%	2.34%	0.71%		0.71%	0.30%						0.10%	22.87%	22.36%	
A	847	0.83%	2.13%	5.67%	3.19%	6.26%	37.54%	1.06%	1.42%	0.83%	0.94%	0.71%		1.77%		0.24%							29.16%	8.26%	
A-	222	0.90%	0.45%	0.90%	0.90%	9.01%	4.05%	36.94%			3.60%	1.35%	1.80%	2.25%	1.35%	0.90%	0.45%						20.72%	14.41%	
BBB+	468	0.21%	1.07%	3.85%	0.64%	7.91%	5.13%	0.21%	25.85%		2.14%	5.34%	0.64%	0.85%	1.07%	1.71%	0.85%		0.21%				1.50%	24.79%	16.03%
BBB	518	0.39%	1.16%	5.21%	1.35%	4.44%	9.65%	2.90%	1.93%	21.24%	1.54%	1.93%	3.28%	0.77%	1.74%	0.58%	0.39%		0.19%				32.63%	8.69%	
BBB-	348	0.57%	0.57%	1.72%	3.16%	2.30%	2.30%	2.30%	4.02%	1.15%	29.02%	2.87%	5.75%	4.31%	1.72%	1.44%	0.86%		0.57%				18.97%	16.38%	
BB+	655		1.07%	2.29%	1.37%	4.58%	1.53%	0.76%	4.89%	4.89%	0.92%	24.89%	0.92%	1.22%	2.60%	4.12%	1.83%		1.53%			0.76%	26.26%	13.59%	
BB	486	0.41%	0.41%	1.03%		0.82%	2.67%	1.65%	3.29%	4.73%	3.29%	2.26%	28.40%	0.21%	1.65%	5.14%	1.85%		1.44%		0.21%	0.21%	25.31%	15.02%	
BB-	260		0.38%			0.38%	6.92%	7.69%	1.54%	1.92%	2.31%	3.08%	2.31%	22.31%	0.38%	2.31%	8.85%		3.08%				1.15%	22.69%	12.69%
B+	559		0.36%	0.18%		0.36%	0.89%	15.56%	1.07%	18.25%	3.40%	3.22%	5.01%	0.18%	15.03%	1.25%	4.29%		2.15%			0.72%	15.74%	12.34%	
B	527		0.19%	0.19%	0.19%	0.38%	1.52%	0.19%	1.33%	1.90%	1.14%	5.31%	9.87%	0.95%	1.33%	32.07%	4.74%		6.64%			1.33%	18.79%	11.95%	
B-	708				0.14%	0.42%	0.42%		1.13%	0.99%	0.71%	3.25%	4.80%	0.99%	3.81%	2.40%	37.99%		8.05%			2.97%	13.14%	18.79%	
CCC+	11														9.09%	9.09%	54.55%						27.27%		
CCC	3983						0.05%		0.10%	0.45%	0.25%	0.58%	0.75%	0.25%	1.28%	2.94%	1.26%	0.05%	57.57%		0.83%	11.83%	12.88%	8.94%	
CCC-	13																7.69%		84.62%				7.69%		
CC	1707										0.06%		0.06%		0.12%	0.12%		1.52%		83.07%		9.20%	2.05%	3.81%	
C																									
Total	18559																								

Table 12	Issuers of Asset-Backed Securities - Residential Mortgage-Backed Securities Issues Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																								
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	5429	5.65%	1.97%	1.05%	0.42%	0.79%	0.22%	0.28%	0.57%	0.41%	0.35%	0.41%	0.28%	0.07%	0.24%	0.31%	0.41%		0.39%		0.02%		0.92%	70.27%	14.98%
AA+	2815	0.43%	12.97%	0.99%	0.75%	0.78%	0.78%	0.21%	1.10%	0.64%	0.75%	0.60%	0.25%	0.11%	0.32%	0.28%	0.18%		0.75%				1.28%	52.11%	24.72%
AA	958	1.67%	0.31%	1.25%	0.31%	0.63%	0.21%		0.21%	0.42%	0.21%	0.63%	0.42%		0.31%	0.31%	0.84%		3.34%				1.15%	76.83%	10.96%
AA-	768	3.39%	1.04%	9.90%	0.26%	0.91%	2.34%	0.91%	0.26%	0.13%	0.39%	1.04%	1.43%	0.26%	0.13%	0.52%	0.78%		0.91%		0.13%		3.78%	64.71%	6.77%
A+	2409	0.46%	5.19%	1.62%	0.75%	4.94%	3.15%	1.25%	1.41%	1.20%	0.83%	1.91%	0.46%	0.50%	0.37%	0.83%	0.54%		0.62%				1.74%	56.70%	15.53%
A	1127	1.60%	0.89%	0.80%	0.80%	1.69%	2.93%	0.27%	0.18%	0.18%	0.35%	0.53%	0.18%		0.18%	0.62%	0.62%		1.33%				1.24%	75.33%	10.29%
A-	362	1.10%	4.42%	3.59%	0.83%	7.18%	4.14%	1.93%	0.28%	0.28%	0.28%	0.83%		0.28%	0.28%	1.66%			3.04%				3.87%	58.01%	8.01%
BBB+	1610	0.56%	1.30%	1.37%	1.12%	2.05%	1.99%	0.43%	1.74%	1.06%	0.93%	1.49%	0.68%	0.87%	0.68%	0.87%	1.80%		2.86%				3.17%	56.27%	18.76%
BBB	1212	0.33%	1.32%	1.73%	0.41%	2.15%	2.64%	0.25%	0.66%	1.07%	1.49%	0.74%	0.66%	1.40%	0.50%	0.74%	1.40%		1.73%				2.89%	67.66%	10.23%
BBB-	567	0.35%	0.53%	0.53%	0.53%	3.35%	3.17%	1.23%	1.06%	0.53%	0.35%	1.41%	2.12%	2.29%	0.53%	1.06%	1.59%		3.53%		0.35%		5.64%	55.91%	13.93%
BB+	991	0.40%	1.01%	1.61%	0.61%	1.92%	0.91%	0.40%	0.71%	0.81%	0.30%	1.92%	0.91%	0.40%	1.82%	2.42%	3.13%		8.48%				6.36%	55.90%	9.99%
BB	833	0.36%	1.32%	2.52%	0.60%	3.24%	4.08%	0.24%	0.72%	0.84%	0.24%	0.96%	2.76%	0.36%	0.36%	1.44%	1.80%		4.32%				5.88%	54.86%	13.09%
BB-	446		0.90%	1.57%	0.22%	1.79%	2.69%	0.90%	2.02%	1.12%	1.57%	2.47%	2.24%	1.35%	0.67%	1.35%	2.91%		9.19%	0.22%	0.22%		5.83%	50.22%	10.54%
B+	473	0.42%	0.85%	3.17%	0.42%	1.06%	3.38%	0.85%	1.06%	0.42%	0.63%	1.48%	2.96%		2.33%	0.85%	2.96%		9.51%		0.63%		10.99%	37.21%	18.82%
B	940	0.43%	0.85%	1.06%	0.53%	1.91%	2.02%	0.64%	1.60%	1.81%	0.96%	0.85%	1.49%	0.64%	0.74%	2.23%	1.91%	0.11%	6.81%	0.11%	0.11%		9.26%	40.43%	23.51%
B-	1544	0.39%	0.71%	2.14%	0.13%	1.10%	1.81%	0.39%	0.97%	1.75%	0.26%	2.01%	1.75%	1.17%	1.68%	1.81%	4.86%	0.32%	13.15%	0.13%	0.65%		13.47%	39.31%	10.04%
CCC+	1																					100.00%			
CCC	8932	0.03%	0.10%	0.22%	0.06%	0.24%	0.39%	0.03%	0.36%	0.66%	0.29%	0.74%	0.74%	0.20%	0.63%	1.31%	1.06%	0.01%	17.17%	0.03%	13.00%		42.96%	14.88%	4.88%
CCC-	12																		8.33%	16.67%			50.00%	25.00%	
CC	7520		0.03%	0.11%		0.01%	0.07%	0.01%	0.01%	0.07%	0.03%	0.11%	0.16%	0.05%	0.17%	0.55%	0.33%		2.93%		3.59%		80.69%	7.89%	3.20%
C																									
Total	38949																								

Table 13	Issuers of Asset-Backed Securities - Commercial Mortgage-Backed Securities Issues Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																									
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	1245	90.36%	0.08%	0.56%	0.40%																			8.43%	0.16%	
AA+	105		74.29%	1.90%																				23.81%		
AA	155	0.65%	18.71%	70.97%	1.29%	1.29%	2.58%																	4.52%		
AA-	289		7.61%	6.92%	68.86%	1.04%	4.15%	3.81%																7.61%		
A+	56					69.64%	5.36%		3.57%															21.43%		
A	69			1.45%		4.35%	78.26%	2.90%		5.80%	1.45%													5.80%		
A-	270		1.11%	0.37%	0.74%	5.56%	5.93%	68.15%	1.48%	3.70%	5.56%													7.04%	0.37%	
BBB+	36					2.78%			83.33%															13.89%		
BBB	58								13.79%	67.24%	5.17%	5.17%	5.17%				1.72%							1.72%		
BBB-	250		0.40%		0.40%	0.40%			5.20%	3.60%	67.20%	1.60%	3.60%	6.00%	0.40%	0.40%								10.00%	0.80%	
BB+	37											54.05%	8.11%	10.81%	5.41%	2.70%								18.92%		
BB	60												61.67%	3.33%	5.00%	18.33%	1.67%			1.67%				8.33%		
BB-	94		1.06%									3.19%	2.13%	69.15%		6.38%	7.45%			1.06%				9.57%		
B+	59														61.02%	5.08%	6.78%		13.56%					13.56%		
B	50															76.00%	10.00%		8.00%					6.00%		
B-	94		1.06%												5.32%		44.68%	1.06%	25.53%	4.26%	1.06%		2.13%	14.89%		
CCC+	4																	50.00%	25.00%	25.00%						
CCC	50																		76.00%	10.00%			10.00%	4.00%		
CCC-	12																			83.33%			16.67%			
CC																										
C																										
Total	2993																									

Table 14	Issuers of Asset-Backed Securities - Commercial Mortgage-Backed Securities Issues Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																									
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	974	72.90%	0.21%	2.16%	0.62%		0.82%	0.21%	0.21%		0.10%			0.21%			0.10%						0.31%	21.66%	0.51%	
AA+	156		33.97%		0.64%		4.49%	0.64%		1.28%														58.97%		
AA	147	0.68%	19.73%	50.34%	2.72%	1.36%	0.68%		2.04%		2.72%		1.36%				0.68%							17.69%		
AA-	267	0.37%	7.87%	1.12%	49.44%	3.75%	4.87%	4.87%	1.12%	0.75%	1.12%	0.37%		0.37%	0.37%									23.22%	0.37%	
A+	54					37.04%	1.85%	5.56%			3.70%	1.85%				3.70%	1.85%		3.70%	1.85%			3.70%	35.19%		
A	69			1.45%		4.35%	44.93%	4.35%	1.45%	2.90%			2.90%			4.35%	2.90%		1.45%					28.99%		
A-	258		1.16%	0.39%	0.39%	4.65%	0.39%	49.61%	4.26%	5.43%	6.59%	1.16%	2.33%	0.39%	0.78%				1.55%				0.78%	19.77%	0.39%	
BBB+	43								30.23%	2.33%		2.33%		2.33%	2.33%				6.98%	2.33%			11.63%	37.21%	2.33%	
BBB	71					1.41%			11.27%	43.66%	4.23%		11.27%			2.82%		1.41%	4.23%					19.72%		
BBB-	277		0.36%		0.36%	0.36%			1.81%	0.36%	45.49%	1.81%	3.61%	9.39%	2.53%	1.08%	1.81%		1.08%				3.25%	22.74%	3.97%	
BB+	54											27.78%	1.85%	1.85%	7.41%	3.70%	1.85%		3.70%	3.70%			1.85%	46.30%		
BB	50												38.00%	10.00%	2.00%	10.00%			6.00%	2.00%			8.00%	24.00%		
BB-	151		0.66%									0.66%	0.66%	23.18%	7.28%	15.23%	9.93%		9.93%	3.31%			5.30%	22.52%	1.32%	
B+	50														24.00%	8.00%	8.00%		14.00%	6.00%			10.00%	30.00%		
B	49															26.53%	2.04%		6.12%	8.16%			24.49%	28.57%	4.08%	
B-	109		0.92%												1.83%		21.10%	0.92%	23.85%	2.75%	0.92%		15.60%	31.19%	0.92%	
CCC+	3																	33.33%					33.33%	33.33%		
CCC	12																		25.00%	8.33%			41.67%	25.00%		
CCC-	18																			5.56%			61.11%	33.33%		
CC	2																						100.00%			
C																										
Total	2814																									



Table 15	Issuers of Asset-Backed Securities - Commercial Mortgage-Backed Securities Issues Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																									
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	1658	1.45%		0.36%			0.42%		0.12%					0.12%										77.80%	19.72%	
AA+	183		3.83%				1.09%	0.55%																91.80%	2.73%	
AA	213			7.51%	0.94%	0.47%	0.47%			0.94%	0.94%		0.94%				0.47%						0.47%	83.10%	3.76%	
AA-	126			2.38%	0.79%											0.79%								90.48%	5.56%	
A+	221			0.90%		0.90%	1.36%	1.36%	0.90%	0.45%									0.90%				3.62%	86.88%	2.71%	
A	263			0.38%	0.38%	3.04%	1.14%	0.38%							0.38%	0.76%	0.38%		0.38%				2.66%	87.45%	2.66%	
A-	193			0.52%		0.52%		0.52%	1.55%	0.52%	3.11%		0.52%				0.52%		2.07%				5.18%	83.94%	1.04%	
BBB+	199						0.50%		0.50%	5.03%					0.50%	0.50%			1.01%				3.02%	87.94%	1.01%	
BBB	267				0.75%	0.37%		1.12%		3.75%			0.75%			0.75%	0.37%		0.75%				6.37%	81.65%	3.37%	
BBB-	211										0.47%		0.47%				0.47%		0.95%				8.06%	84.83%	4.74%	
BB+	231						0.43%					1.30%			0.87%	0.43%			0.87%				8.66%	83.98%	3.46%	
BB	211												0.47%			0.47%	0.47%		0.47%				18.48%	77.73%	1.90%	
BB-	189												0.53%						1.59%	0.53%	0.53%		17.99%	75.66%	3.17%	
B+	229											0.44%			0.87%								26.64%	68.12%	3.93%	
B	223																	0.45%	0.45%				35.43%	61.43%	2.24%	
B-	350														0.29%	0.29%							45.14%	52.86%	1.43%	
CCC+	142																						53.52%	42.25%	4.23%	
CCC	223						0.45%																69.96%	27.80%	1.79%	
CCC-	486																						72.22%	25.10%	2.67%	
CC	16																						100.00%			
C																										
Total	5834																									

Table 16	Issuers of Asset-Backed Securities - Collateralized Loan Obligations Issues Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)		
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	1939	88.71%																						11.24%	0.05%
AA+	29	13.79%	58.62%																					27.59%	
AA	1654	0.60%	1.15%	90.87%																				7.38%	
AA-	12	8.33%			91.67%																				
A+	21		9.52%	9.52%	4.76%	42.86%																		33.33%	
A	1298		0.23%	0.39%	0.31%	0.69%	92.06%																	6.24%	0.08%
A-	34					2.94%		85.29%																11.76%	
BBB+	39					2.56%		82.05%																15.38%	
BBB	271		0.37%			1.85%	1.11%	0.37%	0.37%	88.93%														6.64%	0.37%
BBB-	975						0.10%		0.41%	92.62%														6.46%	
BB+	36								2.78%	13.89%	72.22%													11.11%	
BB	81					1.23%					2.47%	86.42%												9.88%	
BB-	893										0.22%	0.22%	93.28%											6.27%	
B+	121				0.83%							0.83%	1.65%	13.22%	78.51%									4.96%	
B	32													3.13%	9.38%	75.00%								12.50%	
B-	422															0.24%	95.26%							4.50%	
CCC+	34																11.76%	64.71%	2.94%	2.94%	2.94%			14.71%	
CCC	6																		50.00%	33.33%				16.67%	
CCC-	5																			60.00%	20.00%			20.00%	
CC	6																				50.00%			33.33%	16.67%
C																									
Total	7908																								

Table 17	Issuers of Asset-Backed Securities - Collateralized Loan Obligations Issues Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	1208	36.09%																					63.66%	0.25%	
AA+	27		11.11%																				88.89%		
AA	956	1.99%	2.09%	42.89%	0.10%																		52.82%	0.10%	
AA-	13				23.08%																		76.92%		
A+	24	8.33%		4.17%		4.17%																	83.33%		
A	780	0.38%	0.90%	1.54%	0.64%	1.15%	46.54%	0.38%	0.13%		0.13%												47.95%	0.26%	
A-	36			2.78%			2.78%	33.33%	2.78%		2.78%												55.56%		
BBB+	25								12.00%	8.00%					4.00%								76.00%		
BBB	247		0.40%			2.83%	2.43%	0.81%	2.02%	34.41%	3.64%	0.81%			0.40%								51.42%	0.81%	
BBB-	516					0.19%	0.19%	0.19%	0.58%	0.58%	54.65%	2.91%											40.70%		
BB+	10											20.00%						10.00%					70.00%		
BB	163											3.07%	35.58%	5.52%	5.52%	1.84%	1.23%						47.24%		
BB-	525	0.19%											0.76%	42.67%	15.81%	3.05%	2.48%				0.38%		34.67%		
B+	12											8.33%					8.33%	8.33%	8.33%			8.33%	50.00%		
B	37															8.11%	29.73%	2.70%	2.70%			2.70%	54.05%		
B-	253																66.01%	7.11%	0.40%	0.40%	0.40%	1.98%	23.72%		
CCC+	7																14.29%		14.29%	14.29%		28.57%	14.29%		
CCC	5																	20.00%			20.00%	40.00%	20.00%		
CCC-	3				33.33%															66.67%					
CC	1																							100.00%	
C																									
Total	4848																								

Table 18	Issuers of Asset-Backed Securities - Collateralized Loan Obligations Issues Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																									
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	802																						98.88%	1.12%		
AA+	826																	99.39%					0.61%			
AA	410																						98.29%	1.71%		
AA-	271																						99.26%	0.74%		
A+	336		0.30%	0.30%																			99.40%			
A	371																					0.27%	97.30%	2.43%		
A-	151																						100.00%			
BBB+	307																						100.00%			
BBB	336						0.30%										0.30%	0.30%						1.19%		
BBB-	161																					0.62%	98.76%	0.62%		
BB+	306																						99.67%	0.33%		
BB	282	0.71%										0.35%						0.35%			0.35%		0.35%	95.74%	2.13%	
BB-	94																						100.00%			
B+	260																						0.38%	99.62%		
B	72																						5.56%	94.44%		
B-	53																						3.77%	94.34%		
CCC+	125																						7.20%	91.20%		
CCC	18																			5.56%			38.89%	55.56%		
CCC-	114																						23.68%	73.68%		
CC	41																						65.85%	26.83%		
C																										
Total	5336																									

Table 19	Issuers of Asset-Backed Securities - Collateralized Debt Obligations Issues Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	7	57.14%																						42.86%	
AA+	27		100.00%																						
AA	33			60.61%																				39.39%	
AA-	10				70.00%																			30.00%	
A+	62					72.58%		4.84%																22.58%	
A	26					3.85%	61.54%																	34.62%	
A-	17							58.82%																41.18%	
BBB+	48					2.08%	2.08%	2.08%	41.67%	52.08%															
BBB	9									77.78%														22.22%	
BBB-	10									10.00%	60.00%													20.00%	10.00%
BB+	2											50.00%												50.00%	
BB	1												100.00%												
BB-	3													66.67%										33.33%	
B+	4												25.00%	25.00%	50.00%										
B	1																							100.00%	
B-	7																57.14%						14.29%	28.57%	
CCC+	1																							100.00%	
CCC	1																		100.00%						
CCC-	11																			45.45%	9.09%		27.27%	18.18%	
CC	21																				85.71%		9.52%	4.76%	
C																									
Total	301																								

Table 20	Issuers of Asset-Backed Securities - Collateralized Debt Obligations Issues Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	14	28.57%																						71.43%	
AA+	35		77.14%																					22.86%	
AA	40			45.00%																				55.00%	
AA-	12				41.67%																			58.33%	
A+	71				2.82%	35.21%																		61.97%	
A	35					28.57%	31.43%																	40.00%	
A-	20						5.00%	40.00%	20.00%															35.00%	
BBB+	64						1.56%	3.13%	25.00%	40.63%	1.56%													28.13%	
BBB	19						10.53%			31.58%														57.89%	
BBB-	11										45.45%													45.45%	9.09%
BB+	7					14.29%							14.29%											57.14%	14.29%
BB	1														100.00%										
BB-	2													100.00%											
B+	5												20.00%	20.00%										40.00%	20.00%
B	3																					33.33%	66.67%		
B-	4																75.00%							25.00%	
CCC+	1																							100.00%	
CCC	1																		100.00%						
CCC-	18																			27.78%	5.56%		33.33%	33.33%	
CC	22																				81.82%		9.09%	9.09%	
C																									
Total	385																								

Table 21	Issuers of Asset-Backed Securities - Collateralized Debt Obligations Issues Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																									
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	166																							92.17%	7.83%	
AA+	129		18.60%	1.55%					0.78%															78.29%	0.78%	
AA	50																							98.00%	2.00%	
AA-	74			5.41%																				83.78%	10.81%	
A+	115																							96.52%	3.48%	
A	129					8.53%	1.55%		0.78%															86.82%	2.33%	
A-	79							1.27%	10.13%															78.48%	10.13%	
BBB+	140							0.71%	2.86%	3.57%	1.43%				0.71%								1.43%	78.57%	10.71%	
BBB	80						2.50%		1.25%	2.50%				1.25%										66.25%	26.25%	
BBB-	122												0.82%										0.82%	91.80%	6.56%	
BB+	209					0.48%					0.48%												1.44%	83.73%	13.88%	
BB	71																						2.82%	84.51%	12.68%	
BB-	102																						5.88%	86.27%	7.84%	
B+	175									0.57%				1.14%									2.29%	82.29%	13.71%	
B	106												0.94%										6.60%	75.47%	16.98%	
B-	108																			0.93%			4.63%	84.26%	10.19%	
CCC+	194																0.52%		0.52%				5.67%	70.10%	23.20%	
CCC	71																1.41%		1.41%				14.08%	59.15%	23.94%	
CCC-	776																0.13%			0.39%	1.29%		25.26%	57.86%	15.08%	
CC	290																				3.10%		51.72%	16.90%	28.28%	
C																										
Total	3186																									

Table 22		Issuers of Asset-Backed Securities - Asset-Backed Commercial Paper Issues Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)						Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)		
Credit Rating	Number of Ratings Outstanding	A-1+	A-1	A-2	A-3	B	C	Default	Paid Off	Withdrawn (Other)
A-1+	79	51.90%							48.10%	
A-1	229		88.65%	8.73%					2.62%	
A-2	8		12.50%	50.00%					25.00%	12.50%
A-3										
B	1								100.00%	
C										
Total	317									



Table 23		Issuers of Asset-Backed Securities - Asset-Backed Commercial Paper Issues Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)						Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)		
Credit Rating	Number of Ratings Outstanding	A-1+	A-1	A-2	A-3	B	C	Default	Paid Off	Withdrawn (Other)
A-1+	87	27.59%	2.30%						64.37%	5.75%
A-1	192	1.56%	77.08%	8.33%					10.42%	2.60%
A-2	9		11.11%	33.33%					44.44%	11.11%
A-3										
B										
C										
Total	288									

Table 24		Issuers of Asset-Backed Securities - Asset-Backed Commercial Paper Issues Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)								
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)						Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)		
Credit Rating	Number of Ratings Outstanding	A-1+	A-1	A-2	A-3	B	C	Default	Paid Off	Withdrawn (Other)
A-1+	95	10.53%	3.16%						67.37%	18.95%
A-1	147	3.40%	37.41%	2.04%					23.81%	33.33%
A-2	9			11.11%					66.67%	22.22%
A-3	1								100.00%	
B										
C										
Total	252									

Table 25	Issuers of Asset-Backed Securities - Other Asset-Backed Securities Issues Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	1681	62.28%		0.06%																				37.54%	0.12%
AA+	443	13.77%	76.75%																					9.48%	
AA	727	11.55%	3.58%	72.63%			0.55%																	11.69%	
AA-	95	22.11%	6.32%	8.42%	45.26%			1.05%																16.84%	
A+	156	6.41%	6.41%	6.41%	6.41%	51.28%		5.13%																17.95%	
A	738	3.79%	2.85%	2.44%	0.81%	1.22%	77.37%			0.27%	0.14%													11.11%	
A-	280	2.50%	1.07%	0.36%	1.43%	1.07%	7.86%	75.71%																10.00%	
BBB+	210	3.33%		1.90%	0.48%	2.38%	2.86%	3.81%	74.76%	0.48%		0.48%												9.52%	
BBB	304	0.99%	1.64%	1.64%	1.32%	3.62%	4.93%	3.62%	3.29%	69.74%	0.33%				0.33%									8.55%	
BBB-	115		0.87%	1.74%	0.87%	0.87%	3.48%	1.74%	6.96%	1.74%	69.57%					0.87%								11.30%	
BB+	69	1.45%			1.45%	1.45%	1.45%	1.45%	4.35%	5.80%	2.90%	63.77%	1.45%			1.45%								13.04%	
BB	86	1.16%				1.16%		4.65%	3.49%	5.81%	4.65%	8.14%	58.14%	1.16%				1.16%						10.47%	
BB-	133		0.75%				1.50%	2.26%	3.76%	3.01%	0.75%	4.51%	3.01%	64.66%										15.79%	
B+	52		1.92%								1.92%	5.77%		1.92%	53.85%	7.69%		3.85%						23.08%	
B	78			1.28%	1.28%				2.56%			2.56%	2.56%	1.28%	5.13%	51.28%	2.56%		7.69%				2.56%	19.23%	
B-	58	3.45%										5.17%				6.90%	70.69%	5.17%	1.72%					6.90%	
CCC+	27																3.70%	62.96%		14.81%				18.52%	
CCC	40																7.50%	5.00%	72.50%					15.00%	
CCC-	43																	2.33%		81.40%				13.95%	
CC	88												2.27%				1.14%		1.14%	2.27%	88.64%		2.27%	2.27%	
C																									
Total	5423																								

Table 26	Issuers of Asset-Backed Securities - Other Asset-Backed Securities Issues Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	1848	25.70%		0.11%						0.05%														73.81%	0.32%
AA+	485	9.07%	50.10%	0.41%			0.62%																	39.59%	0.21%
AA	779	5.01%	2.05%	41.34%			0.13%																	51.35%	0.13%
AA-	97	11.34%	3.09%	3.09%	15.46%	1.03%		1.03%																62.89%	2.06%
A+	188	4.26%	4.26%	2.66%	1.60%	23.40%	2.13%	4.26%																56.38%	1.06%
A	675	3.11%	1.93%	1.04%		0.44%	34.22%	0.15%	1.04%	0.59%	0.30%	0.30%		0.30%		0.30%	0.15%	0.15%						53.78%	2.22%
A-	192	1.04%		0.52%			9.90%	43.75%			0.52%							1.04%						41.15%	2.08%
BBB+	230	4.35%	0.87%	0.87%	0.43%		0.43%	3.04%	38.70%															51.30%	
BBB	384	10.68%	0.78%	1.82%	1.04%	0.52%	2.34%	0.78%	2.08%	22.66%	0.78%	1.30%	1.04%	0.26%	0.52%	0.78%	1.82%	0.26%	0.26%					46.09%	4.17%
BBB-	74	4.05%						2.70%		2.70%	37.84%				1.35%	1.35%				1.35%				47.30%	1.35%
BB+	58		1.72%				1.72%			1.72%	3.45%	20.69%	3.45%			3.45%								62.07%	1.72%
BB	122	5.74%	0.82%	0.82%		0.82%	3.28%	1.64%	1.64%	1.64%	3.28%	4.10%	12.30%	1.64%	2.46%	2.46%	1.64%	2.46%	1.64%					51.64%	
BB-	67	7.46%	4.48%	1.49%		5.97%	1.49%	5.97%	2.99%	4.48%		7.46%	1.49%	17.91%	4.48%		1.49%							31.34%	1.49%
B+	25	4.00%		4.00%	4.00%							4.00%	4.00%		4.00%	4.00%		4.00%						68.00%	
B	68		4.41%	2.94%		1.47%	2.94%		2.94%	1.47%		8.82%	4.41%	1.47%		16.18%	1.47%		10.29%			4.41%	32.35%	4.41%	
B-	51	3.92%										9.80%				3.92%	23.53%	5.88%	7.84%					43.14%	1.96%
CCC+	18											5.56%				22.22%		33.33%						38.89%	
CCC	41											2.44%			2.44%		7.32%	4.88%	43.90%	4.88%	14.63%			19.51%	
CCC-	48																		2.08%	60.42%	10.42%			22.92%	4.17%
CC	87												1.15%				1.15%		1.15%	2.30%	77.01%		12.64%	2.30%	2.30%
C																									
Total	5537																								

Table 27	Issuers of Asset-Backed Securities - Other Asset-Backed Securities Issues Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																									
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	1238	2.91%		0.08%		0.08%																		96.20%	0.73%	
AA+	903	5.54%	19.16%	0.33%		0.33%	0.33%									0.55%			1.00%				0.44%	72.54%	0.11%	
AA	554	0.72%	1.81%	9.57%	0.36%		0.18%							0.72%		0.72%			0.54%					84.84%	0.54%	
AA-	191	1.05%	5.24%	4.19%		0.52%																		89.01%		
A+	294	1.02%	2.38%	3.40%		0.68%			1.36%															90.14%	1.02%	
A	618	0.81%	1.29%	3.72%	1.29%	0.81%	0.97%	0.65%	0.16%	0.81%			0.32%			0.16%		0.16%			0.16%			87.38%	1.29%	
A-	273	1.10%			0.37%			12.82%	10.26%	0.37%		1.10%					1.10%		0.73%					68.86%	3.30%	
BBB+	115	6.09%	5.22%	1.74%	2.61%	2.61%		0.87%							1.74%								0.87%	76.52%	1.74%	
BBB	448	0.22%	0.22%	0.22%		0.22%	0.22%	1.34%	4.02%	0.45%	0.22%	0.45%			0.22%		0.89%		0.22%					87.95%	3.13%	
BBB-	60			3.33%							3.33%	3.33%			1.67%									86.67%	1.67%	
BB+	55			1.82%			3.64%				1.82%												5.45%	87.27%		
BB	83	1.20%	1.20%	1.20%		1.20%		1.20%		3.61%	1.20%	1.20%	1.20%				1.20%						1.20%	83.13%	1.20%	
BB-	37											8.11%			2.70%	2.70%	2.70%		2.70%				5.41%	75.68%		
B+	53							1.89%								1.89%	3.77%	1.89%		3.77%			11.32%	66.04%	9.43%	
B	57	5.26%	1.75%			1.75%	1.75%		3.51%			5.26%									7.02%			73.68%		
B-	87	1.15%					1.15%					10.34%				1.15%	6.90%	3.45%	2.30%	3.45%	3.45%		6.90%	57.47%	2.30%	
CCC+	27					3.70%										14.81%		7.41%	3.70%	22.22%	7.41%		11.11%	18.52%	11.11%	
CCC	76						1.32%					2.63%					5.26%	3.95%	7.89%	13.16%	11.84%		19.74%	31.58%	2.63%	
CCC-	70							1.43%							1.43%				1.43%	17.14%	31.43%		11.43%	28.57%	7.14%	
CC	99																		1.01%		37.37%		48.48%	9.09%	4.04%	
C																										
Total	5338																									

Table 28	Issuers of Asset-Backed Securities - Other Structured Finance Products Issues Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	38	92.11%		2.63%																				5.26%	
AA+	53		98.11%																					1.89%	
AA	23			95.65%																				4.35%	
AA-	5				100.00%																				
A+	16				6.25%	43.75%		6.25%																43.75%	
A	3						66.67%																	33.33%	
A-	10							80.00%																20.00%	
BBB+	27								77.78%	14.81%														7.41%	
BBB	43									76.74%	18.60%													4.65%	
BBB-	15										100.00%														
BB+	14											100.00%													
BB	16										6.25%	12.50%	75.00%											6.25%	
BB-	18											5.56%		66.67%	11.11%		5.56%							11.11%	
B+	17													11.76%	82.35%									5.88%	
B	9														22.22%	66.67%								11.11%	
B-	4																100.00%								
CCC+																									
CCC																									
CCC-	2																			100.00%					
CC	10																				100.00%				
C																									
Total	323																								

Other Structured Finance Products is comprised of covered bonds, CDO operating companies, synthetic structured finance products, and other structured credits.

Table 29	Issuers of Asset-Backed Securities - Other Structured Finance Products Issues Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																									
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	37	64.86%		2.70%																				32.43%		
AA+	58		89.66%																					10.34%		
AA	34			58.82%	5.88%																			35.29%		
AA-	4				75.00%																			25.00%		
A+	16					37.50%		6.25%																56.25%		
A	9				11.11%		11.11%	33.33%																44.44%		
A-	11							45.45%	18.18%															36.36%		
BBB+	49							32.65%	34.69%															32.65%		
BBB	29							65.52%	27.59%															6.90%		
BBB-	16								75.00%	6.25%														18.75%		
BB+	6									66.67%														33.33%		
BB	16									56.25%	25.00%		12.50%											6.25%		
BB-	4									25.00%		50.00%												25.00%		
B+																										
B	4											25.00%			50.00%		25.00%									
B-	2																100.00%									
CCC+																										
CCC																										
CCC-	14																			14.29%	21.43%		64.29%			
CC	7																				100.00%					
C																										
Total	316																									

Other Structured Finance Products is comprised of covered bonds, CDO operating companies, synthetic structured finance products, and other structured credits.

Table 30	Issuers of Asset-Backed Securities - Other Structured Finance Products Issues Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																									
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	359	3.90%		0.28%																				69.08%	26.74%	
AA+	131		39.69%																					58.78%	1.53%	
AA	29				6.90%																			89.66%	3.45%	
AA-	80			12.50%		2.50%		3.75%																80.00%	1.25%	
A+	40	2.50%				5.00%		2.50%																87.50%	2.50%	
A	76	2.63%							1.32%															94.74%	1.32%	
A-	110			0.91%			0.91%	0.91%	3.64%	13.64%														78.18%	1.82%	
BBB+	40							5.00%	12.50%		2.50%				5.00%									72.50%	2.50%	
BBB	82								6.10%	13.41%	6.10%	1.22%												71.95%	1.22%	
BBB-	57								3.51%	7.02%	5.26%	1.75%	3.51%											78.95%		
BB+	58										12.07%	12.07%												70.69%	5.17%	
BB	25																8.00%					4.00%	80.00%	8.00%		
BB-	9																							66.67%		
B+	14											11.11%			22.22%									85.71%	7.14%	
B	7																							14.29%	85.71%	
B-	14											35.71%									7.14%		57.14%			
CCC+	3																					100.00%				
CCC	6																			16.67%			83.33%			
CCC-	10																			10.00%		40.00%		10.00%	40.00%	
CC	15																					33.33%	13.33%	26.67%	26.67%	
C	14																						85.71%	14.29%		
Total	1179																									

Other Structured Finance Products is comprised of covered bonds, CDO operating companies, synthetic structured finance products, and other structured credits.



Table 31	Sovereign Issuers Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	12	100.00%																							
AA+	4		100.00%																						
AA	7		14.29%	85.71%																					
AA-	9			11.11%	88.89%																				
A+	10					100.00%																			
A	4						100.00%																		
A-	5							80.00%	20.00%																
BBB+	4								100.00%																
BBB	10								20.00%	70.00%														10.00%	
BBB-	11								9.09%	9.09%	81.82%														
BB+	4											100.00%													
BB	6											33.33%	66.67%												
BB-	8												12.50%	75.00%		12.50%									
B+	14												7.14%		85.71%	7.14%									
B	11															72.73%		18.18%	9.09%						
B-	14															7.14%	71.43%	14.29%				7.14%			
CCC+	5																40.00%	20.00%		40.00%					
CCC	2																		50.00%					50.00%	
CCC-	1																	100.00%							
CC	1																				100.00%				
C																									
Total	142																								

Table 32	Sovereign Issuers Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	11	100.00%																							
AA+	5	20.00%	80.00%																						
AA	7			85.71%		14.29%																			
AA-	10		10.00%	10.00%	70.00%	10.00%																			
A+	5				20.00%	80.00%																			
A	8					37.50%	50.00%	12.50%																	
A-	6							50.00%	50.00%																
BBB+	6								33.33%	33.33%	33.33%														
BBB	10								20.00%	50.00%	20.00%														
BBB-	9								11.11%	11.11%	55.56%	22.22%												10.00%	
BB+	4											50.00%	25.00%		25.00%										
BB	5											20.00%	80.00%												
BB-	10											10.00%	10.00%	50.00%	10.00%	20.00%									
B+	11														72.73%	27.27%									
B	16															31.25%	25.00%	12.50%	12.50%	6.25%		12.50%			
B-	12															8.33%	50.00%	25.00%				8.33%		8.33%	
CCC+	2																50.00%	50.00%							
CCC	1																				100.00%				
CCC-	1																							100.00%	
CC	1																					100.00%			
C																									
Total	140																								

Table 33	Sovereign Issuers Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																									
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	14	78.57%	14.29%	7.14%																						
AA+	7	14.29%	28.57%	14.29%	14.29%	14.29%																		14.29%		
AA	5			80.00%		20.00%																				
AA-	9		11.11%	11.11%	33.33%	33.33%		11.11%																		
A+																										
A	7				14.29%	14.29%	28.57%	14.29%			14.29%		14.29%													
A-	9							22.22%	33.33%	11.11%	11.11%		11.11%	11.11%												
BBB+	7				14.29%				14.29%	14.29%	28.57%	14.29%												14.29%		
BBB	7					28.57%				28.57%	14.29%				28.57%											
BBB-	7						28.57%			14.29%	28.57%	14.29%				14.29%										
BB+	6								33.33%	16.67%	16.67%		16.67%									16.67%				
BB	6								16.67%	16.67%				16.67%	16.67%	16.67%								16.67%		
BB-	13											15.38%	15.38%	7.69%		23.08%	15.38%					15.38%		7.69%		
B+	13												7.69%	7.69%	23.08%	15.38%	23.08%	7.69%		7.69%				7.69%		
B	12														25.00%	8.33%	8.33%	16.67%			8.33%		16.67%	16.67%		
B-	6											16.67%				16.67%		16.67%	16.67%			33.33%				
CCC+	3																33.33%					66.67%				
CCC																										
CCC-																										
CC																										
C																										
Total	131																									

Table 34		U.S. Public Finance Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	1410	96.31%	0.28%																							
AA+	3502	0.43%	93.43%	0.23%																			3.05%	0.35%		
AA	3249		3.60%	90.80%	0.86%	0.06%																	4.28%	0.40%		
AA-	4144		0.07%	1.74%	92.37%	0.65%	0.14%																4.34%	0.68%		
A+	4968		0.02%	0.10%	2.21%	92.27%	0.85%	0.10%	0.04%	0.06%													3.90%	0.44%		
A	3282				0.18%	4.20%	89.40%	0.85%	0.27%	0.06%			0.03%										4.51%	0.49%		
A-	1368				0.07%	0.66%	5.85%	86.18%	1.32%	0.29%	0.22%	0.07%											4.68%	0.66%		
BBB+	569					0.18%	1.41%	10.72%	78.03%	1.41%	0.70%	0.18%											6.33%	1.05%		
BBB	585					0.17%	0.17%	1.54%	26.84%	62.05%	2.74%	0.34%	0.17%										5.30%	0.68%		
BBB-	322							0.31%	1.86%	7.76%	79.19%	3.73%	0.31%		0.31%	0.31%			0.31%				5.28%	0.62%		
BB+	167									1.20%	7.78%	80.84%	3.59%	1.80%		0.60%	0.60%		0.60%				2.99%			
BB	144										0.69%	9.72%	79.17%	2.78%	1.39%					0.69%	0.69%		4.17%	0.69%		
BB-	48										2.08%	4.17%	8.33%	72.92%	4.17%								2.08%	6.25%		
B+	19													5.26%	84.21%	10.53%										
B	16												6.25%	6.25%	6.25%	68.75%							6.25%	6.25%		
B-	10												10.00%				70.00%						20.00%			
CCC+	15																	53.33%	6.67%		6.67%		6.67%	26.67%		
CCC	13									7.69%								7.69%	15.38%				15.38%	38.46%		
CCC-	2																							100.00%		
CC	3																				100.00%					
C																										
Total	23836																									

Table 35	U.S. Public Finance Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																									
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	1356	89.31%	1.62%	0.29%			0.07%																	8.19%	0.52%	
AA+	3462	1.33%	80.07%	1.04%	0.09%	0.06%			0.06%		0.03%	0.03%												16.64%	0.66%	
AA	3289		4.65%	77.29%	2.80%	0.24%	0.36%					0.03%												13.71%	0.91%	
AA-	4252		0.19%	3.62%	77.19%	3.13%	0.78%	0.21%	0.05%	0.02%	0.02%													13.71%	1.08%	
A+	5059		0.02%	0.26%	3.95%	77.51%	2.85%	0.79%	0.18%	0.10%	0.06%	0.02%												13.40%	0.87%	
A	3318			0.12%	0.57%	5.82%	71.49%	2.77%	0.99%	0.54%	0.18%	0.03%	0.03%										0.06%	16.15%	1.24%	
A-	1322			0.08%	0.15%	1.59%	9.46%	65.36%	3.93%	1.29%	0.38%	0.30%	0.15%										0.15%	14.45%	2.72%	
BBB+	703				0.43%	0.43%	2.28%	10.38%	59.89%	4.27%	1.28%	1.14%	0.43%	0.14%		0.14%	0.14%	0.14%					0.28%	15.93%	2.70%	
BBB	453				0.22%	0.66%	0.44%	5.52%	7.51%	52.98%	8.83%	2.43%	0.88%	0.66%	0.44%	0.44%		0.44%					0.44%	15.45%	2.65%	
BBB-	320					1.25%	0.31%		3.13%	8.13%	54.06%	8.44%	2.19%	1.25%	0.31%	0.63%		0.31%	0.63%	0.31%			1.25%	13.75%	4.06%	
BB+	158								3.16%	4.43%	10.13%	44.94%	10.76%	3.16%	2.53%	1.27%	1.27%	0.63%					0.63%	13.92%	3.16%	
BB	118									0.85%	0.85%	10.17%	56.78%	3.39%	0.85%		0.85%				0.85%		0.85%	14.41%	10.17%	
BB-	48											8.33%	18.75%	39.58%	8.33%			2.08%						16.67%	6.25%	
B+	21										4.76%	4.76%	4.76%	4.76%	19.05%	4.76%	4.76%	4.76%	4.76%			4.76%	23.81%	14.29%		
B	23											4.35%	4.35%	8.70%	8.70%	26.09%		4.35%	4.35%			4.35%	30.43%	4.35%		
B-	15										6.67%				13.33%	6.67%	20.00%						40.00%	13.33%		
CCC+	9																		11.11%		11.11%		22.22%	44.44%	11.11%	
CCC	9																	11.11%					33.33%	33.33%	22.22%	
CCC-																										
CC	5																				60.00%		40.00%			
C																										
Total	23940																									

Table 36	U.S. Public Finance Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																									
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																					Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	918	64.60%	4.47%	1.31%	0.33%			0.33%	0.11%															24.40%	4.47%	
AA+	2801	7.35%	35.77%	2.61%	0.57%	0.18%	0.11%	0.04%	0.11%			0.04%	0.04%								0.04%		0.04%	50.77%	2.36%	
AA	2888	3.70%	17.00%	33.07%	6.48%	1.52%	0.55%	0.24%	0.07%	0.10%				0.03%										34.83%	2.39%	
AA-	3573	0.42%	5.18%	16.04%	31.40%	5.79%	1.74%	0.28%	0.28%	0.08%		0.03%	0.03%										0.06%	36.61%	2.07%	
A+	4802	0.08%	1.15%	5.02%	14.47%	33.24%	5.77%	1.81%	1.23%	0.29%	0.25%	0.12%	0.02%	0.02%									0.04%	33.53%	2.96%	
A	3540	0.06%	0.40%	1.50%	6.24%	16.86%	21.33%	3.87%	1.30%	0.71%	0.31%	0.20%	0.08%	0.08%	0.06%								0.06%	43.33%	3.62%	
A-	1573	0.13%	0.19%	1.08%	4.01%	7.69%	15.19%	14.37%	3.56%	1.59%	1.02%	0.32%	0.38%	0.13%	0.13%	0.06%							0.13%	43.80%	6.23%	
BBB+	678		0.29%	0.44%	1.92%	6.78%	10.18%	11.21%	10.62%	2.80%	0.88%	0.29%	0.44%	0.15%			0.15%	0.15%					1.33%	45.72%	6.49%	
BBB	497		0.20%	1.41%	2.21%	2.21%	6.04%	7.04%	10.46%	11.67%	4.43%	2.21%	2.21%	0.20%	0.20%	0.20%			0.20%		0.20%		0.80%	37.02%	11.07%	
BBB-	422			0.47%	0.71%	1.90%	2.13%	2.13%	3.55%	8.29%	13.74%	4.98%	3.55%	1.18%	0.71%	0.47%			0.24%		0.47%		4.74%	41.47%	9.24%	
BB+	100			1.00%	1.00%	1.00%	4.00%	2.00%	2.00%	2.00%	3.00%	8.00%	7.00%	4.00%	1.00%			1.00%				1.00%	47.00%	15.00%		
BB	64				3.13%		3.13%		1.56%	1.56%	3.13%	6.25%	6.25%	1.56%	1.56%		1.56%					3.13%	51.56%	15.63%		
BB-	23						13.04%				4.35%				4.35%	4.35%	4.35%							65.22%	4.35%	
B+	8							12.50%						12.50%									12.50%	62.50%		
B	54					1.85%			1.85%	1.85%			1.85%	1.85%	1.85%								22.22%	51.85%	14.81%	
B-	10																				10.00%		60.00%	30.00%		
CCC+	5																					20.00%		80.00%		
CCC	11																					9.09%	81.82%	9.09%		
CCC-																										
CC	8											12.50%											50.00%	25.00%	12.50%	
C	14				7.14%			7.14%															28.57%	50.00%	7.14%	
Total	21989																									

Table 37	International Public Finance Issuers Ratings 1 Year Transition and Default Rates (December 31, 2021 through December 31, 2022)																								
Credit Ratings as of 12/31/2021		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2021 - 12/31/2022 (Percent)			
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)
AAA	26	100.00%																							
AA+	48	16.67%	81.25%	2.08%																					
AA	49		26.53%	73.47%																					
AA-	25			12.00%	76.00%																			12.00%	
A+	25				8.00%	88.00%																		4.00%	
A	14					7.14%	92.86%																		
A-	11						36.36%	45.45%																18.18%	
BBB+	8							87.50%																12.50%	
BBB	10								80.00%															20.00%	
BBB-	14								7.14%	64.29%														28.57%	
BB+	8										62.50%													37.50%	
BB	14										7.14%	78.57%												14.29%	
BB-	12											8.33%	75.00%	8.33%										8.33%	
B+	6												33.33%	66.67%											
B	4													25.00%	50.00%			25.00%							
B-	2																							100.00%	
CCC+	11																	90.91%						9.09%	
CCC																									
CCC-	1																							100.00%	
CC																									
C																									
Total	288																								

Table 38		International Public Finance Issuers Ratings 3 Year Transition and Default Rates (December 31, 2019 through December 31, 2022)																								
Credit Ratings as of 12/31/2019		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2019 - 12/31/2022 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	29	86.21%	10.34%	3.45%																						
AA+	40	22.50%	75.00%	2.50%																						
AA	53		33.96%	60.38%	1.89%																			3.77%		
AA-	26			15.38%	61.54%	7.69%																		15.38%		
A+	19				15.79%	84.21%																				
A	12					16.67%	58.33%																	25.00%		
A-	13					7.69%	61.54%	15.38%	7.69%															7.69%		
BBB+	10						10.00%	20.00%	40.00%															30.00%		
BBB	16							6.25%	12.50%	43.75%														37.50%		
BBB-	19								10.53%	47.37%	5.26%													36.84%		
BB+	12										33.33%	8.33%	8.33%											50.00%		
BB	17										5.88%	58.82%	5.88%											29.41%		
BB-	12												58.33%	25.00%										16.67%		
B+	6												33.33%	16.67%	16.67%									33.33%		
B	4													50.00%				25.00%						25.00%		
B-	9																	11.11%				77.78%		11.11%		
CCC+	2																	50.00%					50.00%			
CCC	1																					100.00%				
CCC-																										
CC																										
C																										
Total	300																									



Table 39		International Public Finance Issuers Ratings 10 Year Transition and Default Rates (December 31, 2012 through December 31, 2022)																								
Credit Ratings as of 12/31/2012		Credit Ratings as of 12/31/2022 (Percent)																				Other Outcomes During 12/31/2012 - 12/31/2022 (Percent)				
Credit Rating	Number of Ratings Outstanding	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	CC	C	Default	Paid Off	Withdrawn (Other)	
AAA	32	71.88%	12.50%	6.25%		3.13%																		6.25%		
AA+	36	11.11%	55.56%	19.44%		2.78%																		11.11%		
AA	33	15.15%	30.30%	24.24%	6.06%	3.03%																		21.21%		
AA-	31	3.23%	16.13%	12.90%	6.45%	12.90%																		48.39%		
A+	30		10.00%	16.67%	23.33%	13.33%	3.33%																	33.33%		
A	7			28.57%		28.57%	14.29%																	28.57%		
A-	4					25.00%		50.00%																25.00%		
BBB+	16				18.75%		12.50%		6.25%	12.50%	6.25%													43.75%		
BBB	10						20.00%			10.00%	10.00%													60.00%		
BBB-	21						19.05%		19.05%	14.29%	4.76%				9.52%							9.52%		23.81%		
BB+	25									8.00%	12.00%	8.00%	16.00%	4.00%										52.00%		
BB	17											11.76%	23.53%	5.88%										58.82%		
BB-	14											7.14%	14.29%	28.57%	7.14%	7.14%						7.14%		28.57%		
B+	4														25.00%									75.00%		
B	6																					16.67%		83.33%		
B-	11																	9.09%				63.64%		27.27%		
CCC+	1																							100.00%		
CCC																										
CCC-																										
CC																										
C																										
Total	298																									

# S&P Global Ratings Definitions

The below outlines definitions of the symbols, numbers and scores in the rating scales used by S&P Global Ratings ('SPGR') to denote credit rating categories and notches within those categories for the classes and subclasses of credit ratings shown in the Matrices contained within SPGR's Form NRSRO Exhibit 1 Matrices.

## I. GENERAL-PURPOSE CREDIT RATINGS

1. The following sets of rating definitions are for long-term and short-term credit ratings for both issuer and issue ratings. These types of credit ratings cover the broadest set of credit risk factors and are not limited in scope. Some refer to these as the "traditional" credit ratings.

### A. Issue Credit Ratings

2. An S&P Global Ratings issue credit rating is a forward-looking opinion about the creditworthiness of an obligor with respect to a specific financial obligation, a specific class of financial obligations, or a specific financial program (including ratings on medium-term note programs and commercial paper programs). It takes into consideration the creditworthiness of guarantors, insurers, or other forms of credit enhancement on the obligation and takes into account the currency in which the obligation is denominated. The opinion reflects S&P Global Ratings' view of the obligor's capacity and willingness to meet its financial commitments as they come due, and this opinion may assess terms, such as collateral security and subordination, which could affect ultimate payment in the event of default.
3. Issue credit ratings can be either long-term or short-term. Short-term issue credit ratings are generally assigned to those obligations considered short-term in the relevant market, typically with an original maturity of no more than 365 days. Short-term issue credit ratings are also used to indicate the creditworthiness of an obligor with respect to put features on long-term obligations. We would typically assign a long-term issue credit rating to an obligation with an original maturity of greater than 365 days. However, the ratings we assign to certain instruments may diverge from these guidelines based on market practices. Medium-term notes are assigned long-term ratings.

### 1. Long-Term Issue Credit Ratings

4. Issue credit ratings are based, in varying degrees, on S&P Global Ratings' analysis of the following considerations:
  - The likelihood of payment--the capacity and willingness of the obligor to meet its financial commitments on an obligation in accordance with the terms of the obligation;
  - The nature and provisions of the financial obligation, and the promise we impute; and
  - The protection afforded by, and relative position of, the financial obligation in the event of a bankruptcy, reorganization, or other arrangement under the laws of bankruptcy and other laws affecting creditors' rights.
5. An issue rating is an assessment of default risk but may incorporate an assessment of relative seniority or ultimate recovery in the event of default. Junior obligations are typically rated lower than senior obligations, to reflect lower priority in bankruptcy, as noted above. (Such differentiation may apply when an entity has both senior and subordinated obligations, secured and unsecured obligations, or operating company and holding company obligations.)

Table 1

## Long-Term Issue Credit Ratings\*

Category	Definition
AAA	An obligation rated 'AAA' has the highest rating assigned by S&P Global Ratings. The obligor's capacity to meet its financial commitments on the obligation is extremely strong.
AA	An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitments on the obligation is very strong.
A	An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitments on the obligation is still strong.
BBB	An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to weaken the obligor's capacity to meet its financial commitments on the obligation.
BB, B, CCC, CC, and C	Obligations rated 'BB', 'B', 'CCC', 'CC', and 'C' are regarded as having significant speculative characteristics. 'BB' indicates the least degree of speculation and 'C' the highest. While such obligations will likely have some quality and protective characteristics, these may be outweighed by large uncertainties or major exposure to adverse conditions.
BB	An obligation rated 'BB' is less vulnerable to nonpayment than other speculative issues. However, it faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions that could lead to the obligor's inadequate capacity to meet its financial commitments on the obligation.
B	An obligation rated 'B' is more vulnerable to nonpayment than obligations rated 'BB', but the obligor currently has the capacity to meet its financial commitments on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitments on the obligation.
CCC	An obligation rated 'CCC' is currently vulnerable to nonpayment and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitments on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitments on the obligation.
CC	An obligation rated 'CC' is currently highly vulnerable to nonpayment. The 'CC' rating is used when a default has not yet occurred but S&P Global Ratings expects default to be a virtual certainty, regardless of the anticipated time to default.
C	An obligation rated 'C' is currently highly vulnerable to nonpayment, and the obligation is expected to have lower relative seniority or lower ultimate recovery compared with obligations that are rated higher.
D	An obligation rated 'D' is in default or in breach of an imputed promise. For non-hybrid capital instruments, the 'D' rating category is used when payments on an obligation are not made on the date due, unless S&P Global Ratings believes that such payments will be made within the next five business days in the absence of a stated grace period or within the earlier of the stated grace period or the next 30 calendar days. The 'D' rating also will be used upon the filing of a bankruptcy petition or the taking of similar action and where default on an obligation is a virtual certainty, for example due to automatic stay provisions. A rating on an obligation is lowered to 'D' if it is subject to a distressed debt restructuring.

\*Ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the rating categories.

## 2. Short-Term Issue Credit Ratings

Table 2

### Short-Term Issue Credit Ratings

Category	Definition
A-1	A short-term obligation rated 'A-1' is rated in the highest category by S&P Global Ratings. The obligor's capacity to meet its financial commitments on the obligation is strong. Within this category, certain obligations are designated with a plus sign (+). This indicates that the obligor's capacity to meet its financial commitments on these obligations is extremely strong.
A-2	A short-term obligation rated 'A-2' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rating categories. However, the obligor's capacity to meet its financial commitments on the obligation is satisfactory.
A-3	A short-term obligation rated 'A-3' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to weaken an obligor's capacity to meet its financial commitments on the obligation.
B	A short-term obligation rated 'B' is regarded as vulnerable and has significant speculative characteristics. The obligor currently has the capacity to meet its financial commitments; however, it faces major ongoing uncertainties that could lead to the obligor's inadequate capacity to meet its financial commitments.
C	A short-term obligation rated 'C' is currently vulnerable to nonpayment and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitments on the obligation.
D	A short-term obligation rated 'D' is in default or in breach of an imputed promise. For non-hybrid capital instruments, the 'D' rating category is used when payments on an obligation are not made on the date due, unless S&P Global Ratings believes that such payments will be made within any stated grace period. However, any stated grace period longer than five business days will be treated as five business days. The 'D' rating also will be used upon the filing of a bankruptcy petition or the taking of a similar action and where default on an obligation is a virtual certainty, for example due to automatic stay provisions. A rating on an obligation is lowered to 'D' if it is subject to a distressed debt restructuring.

## B. Issuer Credit Ratings

6. An S&P Global Ratings issuer credit rating is a forward-looking opinion about an obligor's overall creditworthiness. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. It does not apply to any specific financial obligation, as it does not take into account the nature of and provisions of the obligation, its standing in bankruptcy or liquidation, statutory preferences, or the legality and enforceability of the obligation.
7. Sovereign credit ratings are forms of issuer credit ratings.
8. Issuer credit ratings can be either long-term or short-term. Long-term issuer credit ratings focus on the obligor's capacity and willingness over the long-term to meet all of its financial commitments, both long- and short-term, as they come due, whereas short-term issuer credit ratings focus on the obligor's capacity and willingness over the short-term to meet all of its financial commitments as they come due.

## 1. Long-Term Issuer Credit Ratings

Table 3

### Long-Term Issuer Credit Ratings\*

Category	Definition
AAA	An obligor rated 'AAA' has extremely strong capacity to meet its financial commitments. 'AAA' is the highest issuer credit rating assigned by S&P Global Ratings.
AA	An obligor rated 'AA' has very strong capacity to meet its financial commitments. It differs from the highest-rated obligors only to a small degree.
A	An obligor rated 'A' has strong capacity to meet its financial commitments but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligors in higher-rated categories.
BBB	An obligor rated 'BBB' has adequate capacity to meet its financial commitments. However, adverse economic conditions or changing circumstances are more likely to weaken the obligor's capacity to meet its financial commitments.
BB, B, CCC, and CC	Obligors rated 'BB', 'B', 'CCC', and 'CC' are regarded as having significant speculative characteristics. 'BB' indicates the least degree of speculation and 'CC' the highest. While such obligors will likely have some quality and protective characteristics, these may be outweighed by large uncertainties or major exposure to adverse conditions.
BB	An obligor rated 'BB' is less vulnerable in the near term than other lower-rated obligors. However, it faces major ongoing uncertainties and exposure to adverse business, financial, or economic conditions that could lead to the obligor's inadequate capacity to meet its financial commitments.
B	An obligor rated 'B' is more vulnerable than the obligors rated 'BB', but the obligor currently has the capacity to meet its financial commitments. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitments.
CCC	An obligor rated 'CCC' is currently vulnerable and is dependent upon favorable business, financial, and economic conditions to meet its financial commitments.
CC	An obligor rated 'CC' is currently highly vulnerable. The 'CC' rating is used when a default has not yet occurred but S&P Global Ratings expects default to be a virtual certainty, regardless of the anticipated time to default.
SD and D	An obligor is rated 'SD' (selective default) or 'D' if S&P Global Ratings considers there to be a default on one or more of its financial obligations, whether long- or short-term, including rated and unrated obligations but excluding hybrid instruments classified as regulatory capital or in nonpayment according to terms. A 'D' rating is assigned when S&P Global Ratings believes that the default will be a general default and that the obligor will fail to pay all or substantially all of its obligations as they come due. An 'SD' rating is assigned when S&P Global Ratings believes that the obligor has selectively defaulted on a specific issue or class of obligations but it will continue to meet its payment obligations on other issues or classes of obligations in a timely manner. A rating on an obligor is lowered to 'D' or 'SD' if it is conducting a distressed debt restructuring.

\*Ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the rating categories.

## II. LOCAL CURRENCY AND FOREIGN CURRENCY RATINGS

9. S&P Global Ratings' issuer credit ratings make a distinction between foreign currency ratings and local currency ratings. A foreign currency rating on an issuer can differ from the local currency rating on it when the obligor has a different capacity to meet its obligations denominated in its local currency versus obligations denominated in a foreign currency.

## III. SPECIAL-PURPOSE RATINGS

### A. SPUR (S&P Underlying Rating)

10. A SPUR is an opinion about the stand-alone capacity of an obligor to pay debt service on a credit-enhanced debt issue, without giving effect to the enhancement that applies to it. These ratings are published only at the request of the debt issuer or obligor with the designation SPUR to distinguish them from the credit-enhanced rating that applies to the debt issue. S&P Global Ratings maintains surveillance of an issue with a published SPUR.

### B. Swap Risk Ratings

11. An S&P Global Ratings swap risk rating is a forward-looking opinion about the likelihood of loss associated with a specific swap transaction (the "swap transaction") entered into by two counterparties.
12. A swap risk rating takes into consideration S&P Global Ratings' view on the terms of the swap transaction including, without limitation, the creditworthiness of one or more reference or underlying obligations or obligors (the "portfolio") above a certain specified threshold percentage or amount, termination events, and potential recovery percentage or amount on the portfolio. All swap risk ratings take into consideration the creditworthiness of the portfolio.
13. A swap risk rating may be modified by the designation "portfolio," "single counterparty--protection buyer" and "single counterparty--protection seller." A swap risk rating (portfolio) takes into consideration only S&P Global Ratings' view on the creditworthiness of the credit default swap portfolio. A swap risk rating (single counterparty--protection buyer) takes into consideration S&P Global Ratings' view on the creditworthiness of the portfolio and the buyer of protection under the swap transaction. A swap risk rating (single counterparty--protection seller) takes into consideration S&P Global Ratings' view on the creditworthiness of the portfolio and the seller of protection under the swap transaction. Because the terms of each swap transaction are highly customized, a swap risk rating may address different risks; therefore, the swap risk ratings should not be viewed as benchmarks related to swap risk across different swap transactions.
14. Swap risk ratings will be modified by a suffix that identifies the type of swap risk rating assigned. The letter ratings will be followed by the designations 'srp,' 'srb,' and 'srs' to correspond with related designations:
  - Portfolio ('srp') ratings only take into consideration the creditworthiness of the reference portfolio of the credit default swap;
  - Single counterparty--protection buyer ('srb') ratings take into consideration the creditworthiness of the reference portfolio and the buyer of protection under the swap transaction; and
  - Single counterparty--protection seller ('srs') ratings take into consideration the creditworthiness of the reference portfolio and the seller of protection under the swap transaction.
15. A swap risk rating (portfolio) does not address either counterparty risk (including risk of periodic payments). Each of swap risk ratings (single counterparty--protection buyer) or (single counterparty--protection seller) addresses the counterparty risk of one of the counterparties to the swap transaction, respectively. None of the swap risk ratings address the specific amount of termination payments that would be payable under the swap transaction. The specific risks addressed by each swap risk rating are stated in the rating letter and the terms and conditions issued for each rated swap transaction.

Table 4

**Swap Risk Ratings\* (see paragraph 14 for suffix)**

<b>Category</b>	<b>Definition</b>
AAA	A swap transaction with a swap risk rating of 'AAA' has the highest rating assigned by S&P Global Ratings. The likelihood of loss under the swap transaction is extremely low.
AA	A swap transaction with a swap risk rating of 'AA' differs from the highest-rated swap transaction only to a small degree. The likelihood of loss under the swap transaction is very low.
A	A swap transaction with a swap risk rating of 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than swap transactions in higher-rated categories. However, the likelihood of loss under the swap transaction is still low.
BBB	A swap transaction with a swap risk rating of 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to an increased likelihood of loss under the swap transaction.
BB, B, CCC, and CC	A swap transaction with a swap risk rating of 'BB', 'B', 'CCC', and 'CC' is regarded as having significant speculative characteristics.
BB	A swap transaction with a swap risk rating of 'BB' indicates less vulnerability to a risk of loss than other speculative issues. However, major ongoing uncertainties or exposure to adverse business, financial, or economic conditions could lead to a substantial increase in the likelihood of loss under the swap transaction.
B	A swap transaction with a swap risk rating of 'B' is more vulnerable to a risk of loss than a swap transaction with a swap risk rating of 'BB'. However, major ongoing uncertainties or exposure to adverse business, financial, or economic conditions will likely lead to a substantial increase in the likelihood of loss under the swap transaction.
CCC	A swap transaction with a swap risk rating of 'CCC' is currently vulnerable to a risk of loss. In the event of adverse business, financial, or economic conditions, the swap transaction is likely to incur loss.
CC	A swap transaction with a swap risk rating of 'CC' is currently highly vulnerable to loss.
D	A swap transaction with a swap risk rating of 'D' has incurred or experienced loss.

\* Swap risk ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the swap risk rating categories.

## History of Rating Actions

In accordance with the rules of the Securities and Exchange Commission (the "Commission"), the NRSRO makes and keeps publicly available on its internet [website](#) in an interactive data file in XBRL format the ratings action information required pursuant to 17 CFR §240.17g-7(b), at the following URL:  
<https://disclosure.spglobal.com/ratings/en/regulatory/ratingshistory>.

## **Method of Calculating Performance Measurement Statistics**

S&P Global Ratings uses the single cohort approach method of calculating the performance measurement statistics in Exhibit 1. The single cohort approach is used to calculate transition and default rates in order to determine the percent of credit ratings at each notch in the rating scale for a given class or subclass and for the applicable time period (1-, 3-, and 10-years) that were rated at the same notch or transitioned to another notch as of the end of the period, and the percent of credit ratings at each notch that were classified as a default or paid off, or had been withdrawn for reasons other than being classified as a default or paid off during the period. For example, a matrix containing 3-year transition and default rates for the class of corporate issuers discloses the number of credit ratings of corporate issuers S&P Global Ratings had outstanding as of the period start date that is three years prior to the most recent calendar year end at each notch in the rating scale used by S&P Global Ratings, the percent of those credit ratings that were rated at the same notch and the percent that transitioned to each other notch in the rating scale as of the end of the 3-year period, and the percent that were classified as a default or paid off, or had been withdrawn at any time during the 3-year period.

Single and average cohort approaches provide different information about rating performance. The single cohort approach uses information from only the most recent 1-, 3-, and 10-year periods and thus presents the rating performance at specific points in time. As such, it is useful for presenting the historical experience of a particular group of ratings under a particular set of circumstances. On the other hand, the average cohort approach uses information from multiple time periods and thus presents the weighted average rating performance across all available 1-, 3-, or 10-year time periods. Both approaches are valid, depending on the needs of the user, but they do not yield comparable information.

S&P Global Ratings uses both single and average cohort approaches in the rating performance measurement statistics it publishes on its Internet website. As noted previously, single and average cohort approaches provide different information about rating performance. S&P Global Ratings uses both approaches to present the rating performance measurement statistics to avoid the pitfalls in estimating default and transition rates using one approach.